

13.6.1 LAND BASED FINANCING MECHANISMS

Apart from the government grants or development funds from the upper tiers of government, the ULBs would require adequate funds from their own sources to meet the objectives of facilitating urban development. Thus, it is inevitable for any local body to generate revenue. Table below shows categorywise sources of revenue of ULBs in India. Most of the ULBs use tax sources and grants to finance their activities, while the other sources of revenue are often ignored or not tapped to the potential that exists. For example, public debt available from market – both institutional and individual/retail investors – is rarely accessed to finance the creation of new urban development infrastructure.

Table 223 Municipal Revenue Sources in Indian states/ULBs

Revenue Head/Category	Sources of Revenue
Tax Revenue	Property Tax, Advertisement Tax, Tax on Animals, Vacant Land Tax, Taxes on Carriages and Carts
Non-Tax Revenue	User Charges, Municipal Fees, Sale & Hire Charges, Lease amounts
Other Receipts	Sundry receipts, Law charges costs recovered, Lapsed deposits, Fees, Fines & Forfeitures, Rent on Tools & Plants, Miscellaneous Sales etc.
Assigned (Shared) Revenue	Entertainment Tax, Surcharge on Stamp duty, Profession Tax, Motor Vehicles Tax
Grant-in-aids	(i) Plan Grants made available through planned transfers from upper tier of Government under various projects, programmes and schemes (ii) Non-Plan Grants made available to compensate against the loss of income and some specific transfers
Loans	Loans borrowed by the local authorities for capital works etc. – HUDCO, LIC, State and Central Governments, Banks and Municipal Bonds

(Source: Mohanty P.K., 'Financing Urban Infrastructure: Some innovative Practices of Resource Mobilisation, CGG working paper, June 2003)

Municipal Resource mobilization needs not only strengthening the existing revenue sources but also using other sources of revenue. Therefore, both conventional and non-conventional sources need to be tapped to the extent possible within the City. The ULBs may benchmark their levy and utilization with reference to the better performing peers within the State as well as outside it. The ULBs may use the general principles of users pay, beneficiaries pay and polluters pay to the justification such that the citizens are well aware of the need for their contribution towards larger societal cause. Table below shows conventional and non-conventional resources that can be tapped by the ULBs.

Table 224 Conventional and non-conventional revenue resources

Sr.No.	Service Revenue Source	Conventional	Non-Conventional Source
1	Property Related	Composite Property Tax	Vacant Land Tax, Service Taxes, Surcharge on Land Registration Duty
2	Water Supply Related	Water Charges	Water Supply Donations, Water Supply Connection Charges, Water Benefit Tax, Water Betterment Charges
3	Sewerage Related	Sewerage Charges	Sewerage Donations, Sewerage Connection Charges, Sewerage Benefit Tax, Sewerage Betterment Charges
4	Solid Waste Management Related	Conservancy Charges	Bulk Garbage Collection Charges
5	Town Planning Related	Building Permit Fee, Development Charges	Betterment Charges; External Betterment Charges; Open Space Contribution; Impact fee; Transferable Development Right; Premium FSI, Sub-division charges; Planning Permission Betterment
6	Engineering Related	No Sources	Road Cutting Charges, Street Tax, Frontage Tax, Cess on Infrastructure, Motor Vehicle Tax/Surcharge on Tax on Petrol and Diesel
7	Trade Licensing Related	Trade Licensing Fee	Business License Fee
8	Advertisement Related	Advertisement Tax	Hoarding Charges, Advertisement Placement Fees, Cable TV Fee, TV Advertisement Charges
9	Shops and Establishment Related	Shop Room rent	Royalty on Auctions

(Source: Mohanty P.K., 'Financing Urban Infrastructure: Some innovative Practices of Resource Mobilisation, CGG working paper, June 2003)

- **Change of Land Use Charges for change of land use from one use to another:** The landuse conversion charge is determined by the newly permitted landuse of that area which is capable of yielding a better income for the land owner.
- The Assam Town & Country Planning Act, 1959 provides for levying Development Charges on landowners. Where permission for a change in the use or development of any land or building is granted in the whole or any part of the planning area, and such change or development is capable of yielding a better income to the owner, the Planning Authority may levy a charge not exceeding 1/3rd of the estimated increase in the value of the land or building in the prescribed manner for permitting such change in use or development.
- **FAR:** Intensity of land utilization depending upon Floor Area Ratio (FAR). Higher FAR means higher order of charges to be paid –tradable FAR.
- **Internal Development Charges and External Development Charges (IDC and EDC):** Instrument of development charges have been used extensively to recover the cost of providing new service and infrastructure in areas proposed to be covered by Master Plans. This mechanism has helped in providing development within the approved colonies in terms of roads, water supply, sewerage, sanitation, drainage, electricity etc. besides the social infrastructures involving education, health care, landscape etc. without involving any cost to the Planning Authority as these costs are loaded as integrated part of pricing of developed plots which are made available to people after development.
- In addition to internal development charges, charges for external development are also collected by development agencies. These charges include the cost of providing city level services involving arterial / ring roads, bypasses, under bridges /over bridges, water treatment plants, sewage treatment plants, major electrical network, trunk services, city level healthcare, education and other services. This is done through the process of working out total cost of development, as per the proposals defined in the development in the master plan. Based on the total developed area under different uses, external development cost is worked on the unit basis of area which is then charged from the developers while granting permission for development. External Development Charges (EDC) is then pooled in the City Development Fund which is then used for funding various projects prepared as per the provisions of the development plan.
- **Vacant land taxes:** levied on vacant land kept within the urban limits to minimize speculation and raise money on account of non-utilization of urban services.
- **Tax on land value increase:** Land values continue to increase in urban context due to various development projects undertaken by the Planning Authority (for eg. GIS Based Master Plan) and economic phenomenon of rise in general prices. A basic objective of Land Value Increment Tax is to capture some of this increase for the benefits of the community. This kind of tax is widely used in numbers of countries including Italy, Malaysia, Australia, Korea, Canada and New Zealand.
- **Planning Charges:** Since preparation of master plan, zonal plan and working out detailed schemes and granting planning permission involves expenditure on the part of Planning Authority, accordingly they can be recovered as integral part of the planning permission so as to raise resources. Further, this approach will help in effective implementation of the Master Plan through increased intervention of planning system.
- **Sale or lease of publicly held land:** Public land assets are sold to private parties. This mechanism requires a detailed inventory of government land, market valuation and strategic decisions about the best use of a particular land. Auctions shall be open for the disposal of land. The provision for this mechanism is given in Section 34 of Assam Town and Country Planning Act 1959.

- **Remunerative Projects:** Planning Authority should take up remunerative projects which augment financial positions and generate revenue for the Authority and subsequently social infrastructure projects can be taken up out of the funds generated from the same. Income from remunerative projects is in the form of rental income from properties like shopping complexes, market fees, parking fee and income from other real assets owned by the SDA.

TOD	Land Pooling	PREMIUM FSI	External Dev Charges	Transfer of FSI
<ul style="list-style-type: none"> • Catalyst for real estate market • Encourage people to use Public Transport • Systematic Densification • Finance generation 	<ul style="list-style-type: none"> • Micro Level Planning • Planned and equitable development • Resource generation for govt and land owner 	<ul style="list-style-type: none"> • Use of additional FSI for resource generation • Densification of specific areas • Maintain the skyline 	<ul style="list-style-type: none"> • Mentioned in the Act • Can be area based 	<ul style="list-style-type: none"> • Can be done for Slum Rehabilitation • Resource generation for the Authority/ Municipality

Figure 191 Resource Mobilisation

The ULBs need to exploit various land based revenues, which have greater implication to urban growth and development and concomitant problems like slum formation, redevelopment, rehabilitation and resettlement. The funds realized from land based revenue sources can be effectively deployed for the improvement of urban poor people living in the slum areas. Several of these sources may already exist in the ULBs but the potential of the same may not have been exploited to fullest extent. Also, there are several other forms of revenues (or, variants of revenues) that need to be tapped and exploited.

13.6.2 INVOLVING PRIVATE SECTORS

Considering the enormity of urban development, requirement of enormous resources, level of service/ infrastructure required to ensure appropriate quality of life in Silchar, it will be critical to involve large number of reputed players in the urban development process in order to ensure effective implementation of master plan. With limited resources available with the parastatal agency, achieving the objective of the comprehensive development plan and its effective implantation appears to be a remote possibility. Accordingly, it will be desirable to make private sector as an active and supportive partner in the process of development and implementation of the Master Plan 2045.

Mechanism of involving private sector will have to be defined clearly in a transparent manner through well-defined policy and legal framework in order to remove any mismatch or ambiguity. Level playing fields have to be created between Private and Public sectors so as not to put private sector in a position of disadvantage. A supportive and exclusive mechanism/ framework will have to be put in place to provide time bound clearance to the private sector development, meeting all the defined norms, standards and conditions of development. Attempt should be made to attract reputed developers in the state in order to usher a new era and culture of urban development. Minor developers should be avoided in order to minimize the chances of mushrooming planned development and ensure provision and development of integrated city level services. Minimum chunk of land to be developed should be defined which can be sustained as self-contained neighbourhoods having all basic amenities of services, physical / social infrastructures to meet the day to day needs of residents. Well-defined standard of development shall form integral part of such development, so that uniformity of development is ensured.

Licensing of developers would be integral and critical part of involving private developers in order to ensure their liability for the development works taken up by them. Legal, institutional and procedural framework for involving private sector in urban development / implementation of master plan needs to be worked out on the basis of detailed study carried out of the pattern adopted by states of Haryana, Punjab, Uttar Pradesh, Maharashtra, Gujarat (where they have put in place successful models of urban development involving private sector. However, such model would need modification depending on the conditions existing in the Silchar to make it successful operationally.

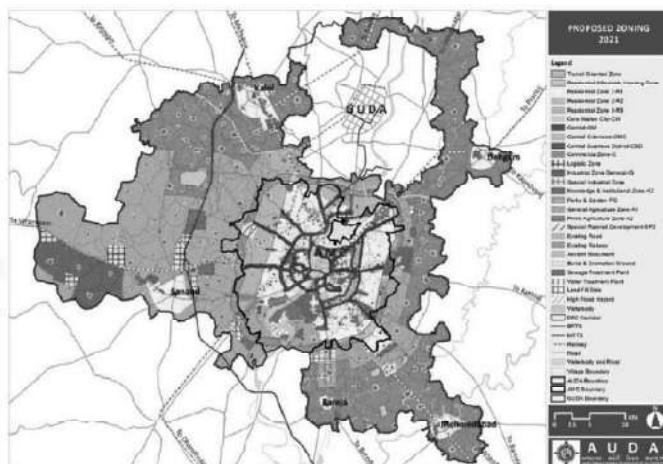
13.6.3 BEST PRACTICES

Land Management Process- Gujarat As the city grows, more land in the surrounding regions gets transformed from rural to urban uses. In the absence of an effective mechanism, this transformation is haphazard and results in congestion and low levels of infrastructure provision. To ensure planned new growth, most cities rely on largescale land acquisition and development of planned layouts. However, this becomes difficult with the increase in land values as well as the active resistance to displacement by displaced landowners. Therefore, it has become imperative to introduce more fair, equitable and inclusive methods of land consolidation that cause minimal displacement if at all. The good example of such a mechanism is from the land process of Gujarat.

Urban planning in Gujarat is a two-step process as prescribed in the GTPUDA and its Rules. The first step is to prepare a "Development Plan" (DP) for the entire city or development area. The second step is to prepare "Town Planning Schemes" (TPS) for smaller portions of the development area for which the Development Plan is prepared.

1. Development Plan (DP)

- Provides Overall Development Framework
- Overall Direction of Urban Expansion
- Land use Zoning
- City level road network
- City Level Infrastructure (Utilities & Amenities)
- Reservations of Land for other Public Purposes
- Reservations of Land for Housing for Urban Poor
- Transport Planning
- Development Control Regulations (DCRs).



2. Town Planning Scheme (TP)

- It is an effective instrument for implementation of Master plan
- It is whole to part- Master plan is Macro level and Town planning schemes is a Micro level planning
- Land Reconstitution- Large chunk of land can be acquired for public purpose through reconstitution of land
- Neighbourhood Level Road Network
- Local Level Infrastructure Implementation
- Costs are distributed; all owners loose same proportion of land; Benefits are shared
- Public inputs are sought; grievances are redressed.



Before TP Scheme



After TP Scheme

13.6.3.1 *Public- Private Partnership for Road Infrastructure Development – Ahmedabad*

Sardar Patel ring road in Ahmedabad demonstrates how PPP models can be used effectively for city Infrastructure development. AUDA has managed to implement a project of such large scale in a brief period of time and set an example for other Development Authorities and ULBs to replicate this success story. Ahmedabad Urban development Authority (AUDA) has developed BOT model to carry out Phase-II development of Ring road.

Private Sector was involved for all technical inputs from initial stage of the project including Planning, technical and financial feasibility studies, surveys, detailed design, construction, supervision and construction quality control to achieve efficiency.

Private participation was involved for following work

- **Junction development**
- **Plantation along the road**
- **Toll tax collection**
- **Signage development**

BOT Model use for Ring road:

BOT model shows an integrated partnership between AUDA and the private party, enabling AUDA to transfer responsibility of design, procurement, construction, operation and maintenance of the road and its facilities to the private party.

The private company generates revenue by collecting fees in the form of toll tax from people using the ring road during the operation and maintenance period.

Key Learning's:

- A participatory approach results in creation of urban infrastructure in a rapid and efficient manner.
- Professional approach to planning and implementation of infrastructure projects.
- Land development through TP scheme leads to an equitable and easy mechanism to acquire land for infrastructure project.



Toll Plaza



Plantation



Flyover

13.6.3.2 *Public- Private Partnership (PPP) For Affordable Housing- Rajasthan*

Public private Partnership (PPP) is merging as an efficient model for delivery of services across various sectors. The concept of PPP in housing sector has evolved widely in order to meet large demand of housing.

PPP approach allows state agencies to overcome resource deficit, improve cost recovery and increase supply of houses based on demand. The public sector owns controls and regulates the use of land which is the most valuable resource for any housing project.

New Initiatives was launched under the affordable Housing Policy, 2009 for using PPP model in Rajasthan. Different PPP models were adopted for meeting the emerging housing demand.

Model: 1 Mandatory Provision

- Private developers to reserve 15% of the dwelling units or 5% of the residential area whichever is higher to be used for EWS/LIG housing in each of their township/Group Housing schemes.

Model: 2 Private Developers on Private Land

- Developer to construct G+3 EWS / LIG flats on 25-40% land owned by him
- These flats should be handed over to Govt. at pre-determined price
- Developer gets additional FAR, twice the permissible limit on entire plot
- Additional FAR can be utilised on remaining plot area or exchanged for TDR
- Waiver of EDC, Plan approval fees, Conversion charges; lower stamp duty

Model: 3 Private Developers on Acquired Land

- Selected developer can take up construction of EWS/LIG/MIG-A flats on the land
- acquired by ULBs
- Land would be made available to developer on payment of compensation
- (Land acquisition cost + 10% Administration charges)

Model: 4 Private Developers on Government Land

- Government land to be offered free of cost to the developer to be selected through an open bidding process
- Developer offering maximum number of EWS/LIG flats, free of cost to the ULB would be awarded the project. At least 50% houses should be of EWS category
- Developer shall be free to use the remaining land as per his choice for residential purpose with 10% of commercial use.

Various incentives to Developers are as follows:

- FAR- Double the permissible Floor Area Ratio
- Complete waiver of external Development Charges, Building Plan Approval Fees, Conversion charges & reduction in stamp duty
- Commercial use upto 10% of plot area
- Fast track approval of the project within 30 days
- Buy back of flats by nodal agency of the government at predetermined prices.

Key Learning's:

- Shortage of affordable housing is emerging as a major challenge for the government, which can be tackled through a series of measures and policy guidelines
- Joint approach brings together the technical and managerial expertise of the private sector with the accountability and fair pricing of the public sector to improve the housing delivery.

13.7 RECOMMENDATIONS & PLANNING POLICY

13.7.1 IMPORTANCE OF PLANNING POLICY GUIDELINES

It is necessary to create an appropriate policy framework for transfer of Government Land to Development Authorities, allotment of land and properties by Development Authorities, establishment of Master Plan Infrastructure Development Fund and institutional mechanism required for implementation of Master Plan proposals and regulatory framework in an effective and efficient manner.

Master Plan of a city and surrounding areas is usually the guiding force for Urbanization. In context of Silchar, it is the SMP, the statutory document for guiding the process of Urbanization of larger urban areas. The SMP creates a long-term vision for development of a city and peripheral areas and provides frame work for organized Urban Development.

The present system of implementation of SMP lacks coordination and an integrated mechanism, which has thrown up following challenges. Firstly, the process of Urbanization requires vacant lands, both government and private, to be developed for the purpose of urban settlements through the process of land assembly and planning. This process should be equitable, effective, and efficient and time bound. In absence of Policy tools like Transferable Development Rights (TDRs), land pooling mechanisms etc., optimum results could not been achieved. Secondly, to roll out all projects contained in SMP, mobilization of financial resources at unprecedented level is required. Successful SMP implementation will require seamless coordination between land allotment, assembly, management, planning and development activities. The task of building and expanding a city to the projected population will require involvement of multiple stakeholders including various departments of Government; therefore, same requires an effective Institutional Mechanism for steering and guiding the process. The challenge of environmentally sustainable and climate proofing of the development needs to be addressed by developing regulatory mechanisms for protection of waterbodies, canals, river, Sustainable Urban Transport strategies through Transit Oriented Development etc.

13.7.2 GENERAL ISSUES ASSOCIATED WITH INDIAN CITIES RELATED TO PLANNING POLICY

The growth of India's urban population has not been accompanied with proportionate increases in urban infrastructure and service delivery capabilities. Cities in India face a range of challenges to meet demand and supply gaps in urban regions, in such areas as water, waste management, energy, mobility, the built environment, education, healthcare and safety. The challenges may exacerbate further if timely and adequate action is not taken. The concept of a planned urban administration is yet to be addressed in India's cities and severe supply and demand gaps are driving cities towards a planned approach to tackle urbanization. Piecemeal efforts have been made but they lack the thrust to address mega issues. Urban India faces challenges across sectors, with some requiring immediate attention and others requiring long-term action.

Rapid urbanization in India has led to increased demands for providing state-of-art infrastructure in Urban Local Bodies (ULBs) and the ULBs are continually looking for new sources of funds in order to meet the requirements of creating and upgrading infrastructure. ULBs have to play a crucial role in implementing the urban rejuvenation programmes, but they lack the resources to execute the programmes. Inadequate institutional capacity, inadequate revenues, a lack of collaboration between multiple planning and administration bodies lead to improper implementation of planning policies. Such issues for are described below :-

Poor collaboration among Planning and Administrative Bodies

The urban governance structure is fragmented in India. At one end of the spectrum lie such cities as

Ahmedabad, in which the ULB provides all services, and at the other end are cities such as Bangalore, in which over 10 agencies are involved in providing urban services. Agencies involved in the planning and administration include ULBs, parastatals, state government agencies and development authorities, among others. With each agency under a different leader, the goals of the agencies are often unaligned, which leads the city to operate in siloes.

Insufficient Capacity

The institutional challenges create a vicious cycle. The inadequate resources coupled with a poor governance structure and archaic processes result in inadequate and low-quality service delivery. Such service delivery attracts lower user charges and compliance that further degrades urban governance and finance.

Inadequate Revenue Base

The ULBs are thus constrained in the absence of funding sources for urban development projects. The major source of revenue for urban local governments are property taxes and user charges but low charge out rates and poor compliance in the payment of charges and taxes have led to financial dependence on the state government.

With declining sources of revenue, local governments must seek funds from the state governments even to fund operational expenses such as the salaries of employees.

Promoting Public-Private Policy Frameworks

PPPs for urban development have had mixed results in India. Urban rejuvenation programmes have encouraged private-sector participation but the following issues must be resolved to attract the best firms:

- Project funding is a challenge with low user charges and insufficient other value capture mechanisms. Although ULBs are not financially independent, they must make projects financially viable through adequate funding mechanisms.
- The sharing of risks in public-private partnership projects has often been suboptimal with revenue risk often passed on to the private sector.
- Government agencies have limited capacity to perform the preparatory work required to develop projects appropriately. The lack of time to ensure good-quality project development could result in reduced private sector interest, mispricing, cost escalation or delays in execution.
- Outstanding and delayed payments to the private sector have resulted in a loss of confidence, aggravated by long-standing disputes.

13.7.3 APPROACH ADOPTED TO DERIVE PLANNING POLICY

To derive the planning policy, certain approach was adopted. The first step was to collect the primary data and secondary data for the planning area. For obtaining Primary data, Household survey as well as Transportation survey was conducted. Apart from these, interaction with government officials, institutions, NGOs, various stakeholders were held to understand strengths, weaknesses, opportunities and threats for the planning area. Secondary data for Demography, Environment, Heritage, Tourism, Economic base, Physical Infrastructure, Social Infrastructure, Housing, Traffic & Transportation etc. were collected from various government departments. The satellite imagery was procured from NRSC, Hyderabad to generate scientific base map. Village wise cadastral maps, Town Survey Sheets, FMB sketches were also procured to be the part of seamless base map. Existing land Use survey was conducted to earmark accurate existing land use on base map.

Simultaneously, analysis for demography, economy, Physical Infrastructure including water supply, sewage,

solid waste management and drainage, Social Infrastructure including education, health, recreation, government organisation etc., Heritage & Tourism, Traffic & Transportation, Housing, Environment were carried out. Considering the population growth in the study region, village level analysis was done to understand the urbanisation pattern. Last four decades for the villages were analysed along with availability of physical as well as social infrastructure. All the existing available infrastructure facilities based on primary and secondary survey were analysed. After thorough analysis and clear understanding, the policies proposed by Government of India were also studied and incorporated according to the study region.

After analysing village level situation of planning area, consulting various stakeholders, options and strategies for planning area are derived. Growth Centres, Growth Points and Transit nodes were identified based on the analysis carried out to give the proposal for future development. Based on the Growth Centres, Growth Points and Transit nodes, circulation pattern of the planning area is proposed with proper hierarchy of roads. The land use based proposals are given at three levels such as overall Silchar planning area, conurbation area and rural area. Various government projects such as AMRUT, CIDF (City Infrastructure Development Fund) are incorporated in the proposal of SMP 2045.

By looking into the issues for implementing planning policy for Silchar such as multiple disciplines for development works, lack of proper coordination among government departments etc., the planning policy for implementation of Traffic & Transportation proposals, Proposals of Public & Semi Public uses, proposals of Environment preservation, to develop affordable housing in planning area, for heritage conservation and for various development projects are derived.

13.7.4 PLANNING POLICY

13.7.4.1 Planning Policy for implementation of Traffic & Transportation Proposals

To derive the planning policy for implementation of traffic & transportation proposals, issues of this sector should be kept in to consideration. Key issues found across the planning area are not upto the mark designed intersections, lack of road hierarchy, absences of dedicated sufficient parking space around key institutions & nodes, bottlenecks along major roads and pedestrian traffic conflict issues.

By looking into the future demand for the roads for the projected population, the roads proposed for widening are proposed in such a way that it minimizes disturbances to the surrounding plot owners. The road widening is proposed within the SMB with maximum possible manner. The new linkages are proposed wherever the missing links are identified. It is also proposed in such a manner that it does not disturb surrounding settlement. The proposals for road widening and new linkages are described in detail in chapter 6.13. Peripheral outer ring road and missing link roads are proposed to connect the different enclaves to avoid the haphazard traffic flow of Silchar region. These proposed roads are identified and studied extensively on the ground, analyzed and verified such that the maximum length of the roads falls under the jurisdiction of Government of Silchar. To enhance the orderly growth through the transportation network system TOD concepts is also applied to have the sustainable development in the study region. Proposals of Public Transportation, Transit nodes, road widening proposals, proposal for new linkages are derived after Transport study. Parking locations are identified in SMB area to manage the traffic congestion within core area.

The other proposals of Traffic & Transportation sector such as transit nodes should be implemented through Land acquisition under the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (LARR). The proposals of road widening, new linkages and parking are to be implemented through the said act.

13.7.4.2 Planning Policy for implementation of Public & Semi-Public uses

To derive the planning policy for implementation of proposals of Public & Semi Public uses, issues of this sector should be kept in to consideration. Looking in to the broader level, Silchar Planning Area is having sufficient educational and healthcare facilities. NIT Silchar, Silchar Medical College and Hospital, Silchar Polytechnic, Assam University, Silchar Womens Collage etc. are very renowned institutions of District level existing in Silchar. The villages of the planning area are also having sufficient health and educational facilities. For the future requirement of the projected population, Public & Semi Public land uses are proposed in planning area.

The Public & Semi Public land uses are proposed on Government Land for easy implementation of public services. This will minimize the hurdles faced during land transaction. As Public & Semi Public land uses are proposed on Government Land, it will be executed at a faster rate. For proposals earmarked over private land, concerned authority such as Education Department, Health Department, PWD, Police Department, Fire Department etc. can take the land on lease and develop it for the public purpose.

13.7.4.3 Planning Policy for implementation of Environmental proposals

To derive the planning policy for implementation of environmental proposals, issues of this sector should be kept in to consideration. From the Existing Land use survey, it was observed that the Water bodies of planning area are deteriorating due to various reasons like encroachments around water bodies, solid waste dumping, disposal of untreated wastewater etc. Barak, Gagra, Madhura and Badri river are some of the important waterbodies which supports for the drinking and agricultural purposes in the system. But due to the rapid urbanization and pressure on the real estate, it is also observed that there is disturbance in the interconnectivity of channels which leads to the deterioration of the waterbodies. Apart from this, the natural drainage pattern of the town is disturbed by anthropogenic activities viz. encroachment on the drains/waterbodies, dumping of solid waste, disposal of untreated wastewater etc in Rangirkhari Drain, Boyalijur Khal and Dubri Drain. As a result, various issues arise, like flooding, drying of water bodies, water logging etc. These issues can be addressed by providing buffer area on both the sides of the waterbodies. This buffer area would also help us to maintain the canals without any hindrances. Apart from this, due to rapid urbanization, land under agricultural activities are decreasing. Decline in land under agriculture is to be controlled in such areas of the planning area.

Hence, the buffers are proposed around water bodies within conurbation area and outside conurbation area. Canals and rivers are also proposed to be protected with conservation buffers. Such buffers are mentioned below:

Table 225 Proposed buffer around waterbody

Sr. No.	Particulars	Proposed Buffer
1.	Barak Drain	30m
2.	Gagra Lake	20m
3.	Madhuri River	15m
4.	Badri River	15m
5.	Kachudaram Khal	5m
6.	Changkuri Khal	5m
7.	Boyalijur Khal	5m

There is a lack of green spaces/recreational area in the planning area. Thus, after the detail study the city level and neighbourhood level parks/playgrounds are proposed. Bhurbhuri Gaon 3 and Timona Gaon are known as the Rice bowl of the planning area. Hence, it is imperative to preserve this rich and fertile agricultural land. This area is preserved by declaring dedicated agriculture zone under SMP – 2045 and Regulated Development will be allowed in certain parts of this area. Untreated wastewater/industrial effluent should not be allowed to discharge in any natural drains/waterbodies. Underground sewerage network has to be provided with adequate sewage treatment facilities.

The land belongs to such buffer area should be developed under strict regulations. Strict monitoring for the implementation of buffer area should be followed. Regulated development with special permission from SDA will be allowed in such buffer areas. Existing structures in the buffer areas shall remain as it is. Permission for redevelopment on site of existing structures or renovation may be obtained from SDA. Permission for any new development may be obtained from SDA in consultation with T&CPD, Silchar.

13.7.4.4 *Planning Policy for implementation of Affordable Housing in planning area*

Owning a house is considered a big issue in today's societies. As such, an exact measure of housing affordability is essential to ensure the need for shelter. Housing is the basic human needs; it is also one of the most important components of urban economic development in any country. In addition, the socioeconomic stability of a country is always depending on the housing affordability of the country. For this reason, housing is a valuable asset that always has a great impact on societal wellbeing. Housing affordability became greater focus in every society; and the affordability problem with regard to housing market is one of the most controversial issues within most developed and developing countries.

It is observed that the price of all kind of housing have been increasing exorbitantly, which indicate that the investment in housing sector is unable to match pace with the increasing demand for housing. Given the importance of housing, there are several issues which need to be tackled to promote the provision of this basic need in Silchar. Rapid urbanization and rural to urban migration has led to a substantial shortage of housing in the region. The direct result of this is the concentration of informal settlements in the city. Given that the shortage in housing is concentrated at the bottom of the pyramid, the sector can play an important role in the socio-economic development.

Moreover, with the rapid urbanization and significant increase in the housing demand, housing sector is considered to be the Engine of immense potential giving a push to the economy because of its link with the employment generation and livelihood. Therefore, provision of housing can make a significant difference in income of families, both in rural and urban areas.

Public Housing in Singapore – a successful model

Today, more than 80% of Singapore's population is living in public flats, with 93% of them owning their flats. Because of this, the public housing model of Singapore is considered as one of the most successful examples of affordable housing models in the world. The Housing and Development Board (HDB) is Singapore's public housing authority and a statutory board under the Ministry of National Development. As Singapore's sole housing agency, the HDB is unique in its organizational structure, function, and approach to housing. It operates like a single, comprehensive source for housing development and coordinates planning, land acquisition, construction, financing, and policy for housing in Singapore. By centralizing its public housing effort, Singapore has avoided the problems of government silos and fragmentation of duties that are associated with multi-agency implementation.

The unique aspect of Singapore's housing model is that emphasis is on ownership rather than rental. Affordability is ensured through a set of modalities, including the provision of different unit sizes, progressive mortgage payments (based on income levels), low interest rates and government subsidies. For example,

government subsidizes low-income groups and first-time buyers for buying houses. Till date, HDB has developed more than 900,000 flats in Singapore, which have been given to Singaporeans.

Housing for All by 2022 – A National Mission

In June 2015, the Union Cabinet chaired by the Prime Minister gave its approval to the "Housing for All by 2022" - National Mission for Urban Housing to address the issue of affordable housing in urban areas. National Urban Housing Mission seeks to meet the gap in urban housing units by 2022 through increased private sector participation and active involvement of the States. It has four broad components or verticals out of which credit linked subsidy would be implemented as a Central Sector Scheme and not a Centrally Sponsored Scheme.

a) Slum rehabilitation of Slum Dwellers with participation of private developers using land as a resource

- The Centre would provide a grant of INR 1 lakh per house to the state for deployment in the development of any slum rehabilitation project

b) Promotion of affordable housing for weaker section through credit linked subsidy - An interest subsidy of 6.5% on housing loans will be provided to EWS/LIG categories, which can be availed upto a tenure of 15 years.

c) Affordable housing in partnership with Public & Private sectors - Central assistance at the rate of INR 1.5 lakh per house for the EWS category will be provided.

d) Subsidy for beneficiary-led individual house construction or enhancement- Central assistance at the rate of INR 1.5 lakh per house for the EWS category will be provided

13.7.4.5 Planning Policy for Heritage conservation

The heritage buildings in the core city area are being converted in to modern style building which lead them to loss of heritage value of the French rule. These buildings must be preserved as it is as they are with the great heritage importance. The heritage conservation in Core city area can be done through Transfer of Development Rights (TDRs). TDRs are given for preservation of heritage landmark buildings and is a way to compensate the property owners for loss in revenue on their properties. Transfer of Development Rights (TDR) is a zoning technique used to permanently protect cultural resources by redirecting development that would otherwise occur on these resource lands to areas planned to accommodate growth and development.

Transfer of Development Rights programs enable landowners within cultural resource areas to be financially compensated for choosing not to develop some or all of their lands. These landowners are given an option under municipal zoning to legally sever the "development rights" from their land and sell these rights to another landowner or a real estate developer for use at another location.

The land from which the development rights have been severed is permanently protected through a conservation easement or other appropriate form of restrictive covenant, and the development value of the land where the transferred development rights are applied is enhanced by allowing for new or special uses, greater density or intensity, or other regulatory flexibility that zoning without the TDR option would not have permitted.

Establishing a TDR program involves the following basic steps:

- Establish the TDR option and administrative provisions. Use of TDRs must be established as a voluntary option.
- Establish the area of high resource conservation value
- Determine the number of TDRs allocated to each landowner within the high resource conservation area

(usually a simple mathematical formula – e.g., one TDR for every five 5 acres).

- Establish the procedure for severance of TDRs
- Provision of the use of a Deed of Transferable Development Rights document
- Establish the procedure for conservation of heritage buildings
- Establish the receiving area (area or areas planned to accommodate growth). Potential receiving areas can be residential, commercial, industrial, or institutional in character, or any combination thereof.

13.7.4.6 Framework for application of Value Capture Finance (VCF) methods to projects

VCF seeks to enable States and city governments raise resources by tapping a share of increase in value of land and other properties like buildings resulting from public investments and policy initiatives, in the identified area of influence.

The different instruments of VCF are; Land Value Tax, Fee for changing land use, Betterment levy, Development charges, Transfer of Development Rights, Premium on relaxation of Floor Space Index and Floor Area Ratio, Vacant Land Tax, Tax Increment Financing, Zoning relaxation for land acquisition and Land Pooling System.

Some Indian cities through state urban regulations have been developing and exercising some of VCF mechanisms – The Mumbai Metropolitan Region Development Authority (MMRDA) and City and Industrial Development Corporation Limited (CIDCO) have used different Value Capture methods including Betterment levy to finance infrastructure development in the urbanizing areas. Tamilnadu and Maharashtra have made Land Value Tax applicable to urban areas too under which increase in land value is tapped through increased revenue tax. West Bengal has formulated a system to capture gains from land use conversion. Area based Development charges are being resorted to in Andhra Pradesh, Gujarat, Maharashtra, Tamilnadu and Madhya Pradesh. Karnataka, Gujarat and Maharashtra have made enabling provisions for enabling Transfer of Development Rights to buy additional FSI/FAR.

Value Capture Methods

- Land Value tax – considered the most ideal value capture tool which apart from capturing any value increment, helps stabilize property price, discourage speculative investments and is considered to be most efficient among all value capture methods. Maharashtra and Tamilnadu, through state laws have expanded the scope of this mechanism to cover urban land also. Globally, land value tax is widely used in Denmark, Australia and New Zealand.
- Fees for changing Land use (agriculture to non-agriculture) – land revenue codes provide for procedures to obtain permission for conversion of land use from agriculture to nonagricultural use.
- Betterment levy – one-time upfront charge on the land value gain caused by public infrastructure investment.
- Impact fees are the fees levied from the owners with illegal construction to get them converted into authorized development.
- Vacant Land Tax (VLT) — applicable on those landowners who have not yet initiated construction on their lands. In Andhra Pradesh, the Greater Hyderabad Municipal Corporation (GHMC) imposes a tax of 0.5% of the registration value of the land if not used exclusively for agriculture purpose or is vacant without a building.
- Tax Increment Financing (TIF) — one of the most popular Value Capture tools in many developed countries, especially the United States. In TIF, the incremental revenues from future increases in property

tax or a surcharge on the existing property tax rate is ring-fenced for a defined period to finance some new investment in the designated area. Tax Increment Financing tools are especially useful to finance new investments in existing habitations. Some of the Smart City Proposals have planned for TIF in their area-based developments (ABD).

- **Land pooling System (LPS)** — a form of land procurement where all land parcels in an area are pooled, converted into a layout, infrastructure developed, and a share of the land, in proportion to original ownership, returned as reconstituted parcels. In India, States such as Gujarat and Haryana have used land assembly programs where the owners agree to exchange their barren lands for infrastructure-serviced smaller plots. Gujarat has used these tools to guide the development of Ahmedabad city and its surrounding infrastructure.

Framework for application of VCF methods to projects

Project initiation - At the time of initiation of the project the rules and regulations governing Value Capture in the Union Territory need to be studied and possibilities.

Planning - The area of influence of the project will be the area in which land and property values are expected to increase due to project location. The starting point is the value impact assessment in the area of influence, which should form a part of the Detailed Project Report (DPR). Next, stakeholders who will benefit from the setting up of the project will have to be identified and consultations held with them right from the stage of project initiation.

Design and Strategy - The Value Capture methods for funding project need to be identified and these methods have to be put in place by the State Governments. This will include the type and number of VCF tools to be applied, methods of assessing, levying and collecting the incremental value generated, time period during which the VCF tools will be in operation, etc.

Execution and Operation - The value capture method for the project should be implemented and an efficient mechanism for monitoring of fund management put in place. Regular monitoring and evaluation of the project progress will have to be established and put in the public domain. Figure below gives the details of the steps to be taken by the Central/State Governments and their agencies at the time of doing project feasibility studies.

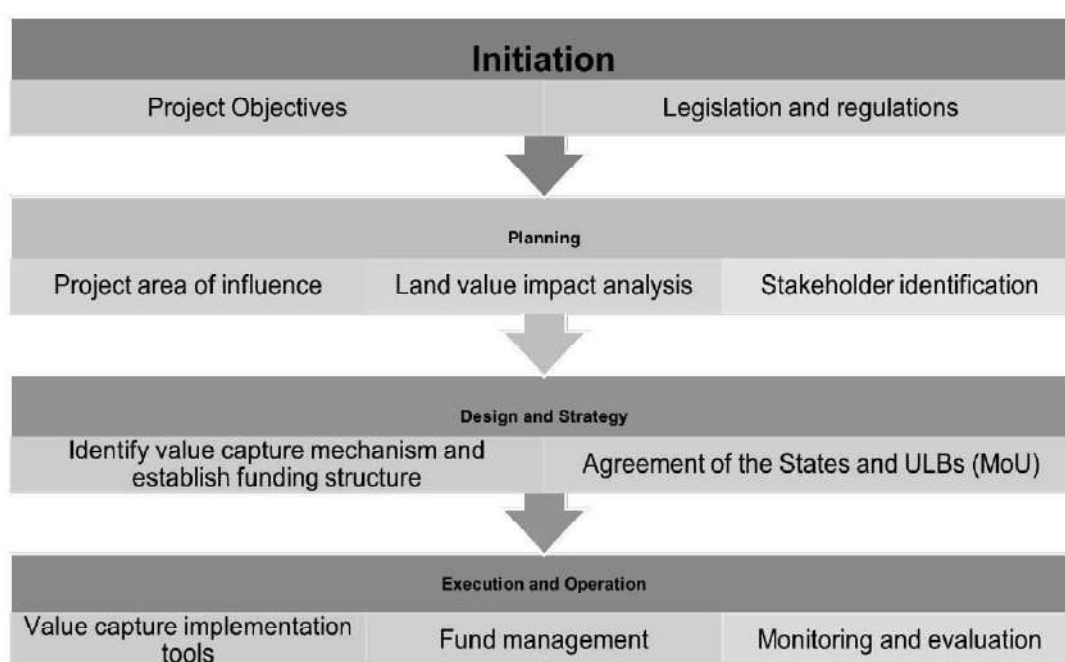


Figure 192 Steps required for Project based VCF policy framework

13.8 URBAN DESIGN GUIDELINES

Urban design is the discipline through which planning and architecture can create or renew a sense of local pride and identity. It has great potential for enhancing the visual image and quality of Neighbourhoods by providing a three-dimensional physical form to policies described in a comprehensive plan. Urban design is process of giving shape to built environment which may address group of buildings of specific character, important streets public spaces etc. This will make urban areas functional, more attractive and sustainable. It focuses on design of the public realm, which is created by both public spaces and the buildings that define them. Urban design is done at various scales viz. at macro scale of urban structure in terms of planning/zoning, transportation and infrastructure networks to the micro scale in terms of street furniture, lighting etc. This section deals with urban design guidelines on certain important areas viz. core area of city, areas with environmental significance, special heritage areas etc. These guidelines direct the process of revitalization, planning, design and management of such areas.

13.8.1 KEY CONSIDERATIONS FOR ENTIRE SMPA 2045

Few considerations are stated below which are essential to arrive at a basis for formulating Urban Design guidelines for urban fabric:

Design Places for People: To make urban places more functional and acceptable these places must be safe, comfortable, vibrant, varied attractive and distinctive.

Design to Enrich Existing context: To enrich qualities and context of existing urban places. This means encouraging a distinctive response that arises from and complements its setting and applies at every scale region, city, town, neighbourhood and street.

Design to enhance accessibility: To make places easily accessible and which are well integrated physically and visually with its surroundings.

Work with Landscape: Design should be such as to strike a balance between natural and manmade environment and utilize each intrinsic resource and character viz. climate, landform, landscape and ecology

Design with Usage of Mixed Forms: Stimulating, enjoyable and convenient places meet a variety of demands from the widest possible range of users and social groups. The design element should weave together different building forms, uses and densities.

Economic Viability: For projects to be, developable and well cared for, they must be economically viable, well managed and maintained. This means understanding the market considerations of developers, ensuring long-term commitment from the community and the local authority, defining appropriate delivery mechanisms and seeing this as part of the design process.

Design for Change: Design needs to be flexible enough to respond and adapt to future changes in use, lifestyle and demography. This means designing for energy and resource efficiency; creating flexibility in the use of property, public spaces and the service infrastructure and introducing new approaches to transportation, traffic management and parking.

13.8.1.1 Vision

To guide physical development towards a desired scale and character that is consistent with the social, economic and aesthetic values of the City.

13.8.1.2 Urban Design Objectives

- To ensure that new development makes a positive contribution to sustainability and the urban fabric
- To enhance and protect the landscape qualities
- To enrich the distinct topographic and landscape qualities and characteristics of the town
- To ensure that all development responds positively to the existing patterns of urban form and character, the landscape qualities, historic and cultural elements and social dimensions and aspirations of the town.
- To reinforce the structure and image of the town as an attractive place to live, do business, recreate and as a tourist attraction.
- To ensure that the declared arterial network of transport and movement corridors makes a positive contribution to town's image.

13.8.1.3 Components of Urban Design

The following aspects need to be considered to arrive at the basis for policies affecting the urban fabric:

- Areas of significance in built environment.
- Visual integration of the city.
- Policy for tall buildings.
- Policy on unhindered access movement, parking and pedestrian realm.
- Policy on Hoardings, Street furniture and Signage.
- Urban Design Scheme.
- Policy for design of pedestrian realm.
- City structure plan and Urban Design objective.
- Policy for conservation of Heritage Precincts Buildings and Zones.

13.8.1.4 Significant Areas of Built Environment

In SMP, following significant areas are identified that needs special urban design consideration.

- New Housing/ neighbourhood development
- Waterfront Development – Barak River
- Heritage Development
- City Gateways
- Streetscapes

New Housing Schemes/ NEIGHBOURHOOD Development**Built Character:**

Group Housing is a cluster or group of attached homes around common lawns, gardens, or play areas. Such areas should provide residents with both private and common outdoor spaces. These common spaces can also foster social interaction amongst residents, between residents of Group Housing. This should be designed to maintain a sense of privacy yet to allow for interaction between neighbors. Yards and entry courtyards when abutting a street or common space should be separated through physical elements such as

open or low fencing, screens, and low hedges or walls.

If pocket park areas are provided, they should reflect character of neighbourhood and contain elements such as lawn, children's play areas etc. When a Group Housing area is enclosed by neighbourhood scale streets, multiple perimeter or street corner gardens may connect multifamily residents with the surrounding neighbourhood better than internalized common space. If feasible these common spaces should be easily observable from unit windows. These common spaces share common area supervision responsibilities among a close-knit group of neighbors.

Category of Development

High rise low density The category is defined by the development where there is more of a marginal space between highrise buildings in form of pedestrianisation, recreational spaces, buffers etc. This kind of development shall be reviewed as Low density because per person to space ratio comparatively is higher.

High rise High density The category is defined by the development where there is a little marginal space between high-rise buildings. This kind of development shall be reviewed as high density because per person to space ratio is comparatively lower.

Low rise low density The category is defined by the development where there is more marginal space between low-rise buildings. This kind of development shall be reviewed as Low density because per person to space ratio is comparatively high.

Low rise High Density The category is defined by the development where there is a little marginal space between low-rise buildings. This kind of development shall be reviewed as high density because per person to space ratio is comparatively low.

Following needs to be encouraged:

- For new Residential Development create edge or boundary conditions in neighbourhood for creating a sense of enclosure
- Buildings along the street compatible with other neighbourhood types in the immediate vicinity.
- Buildings which harmonize with the surrounding neighbourhood.
- Parking areas removed from primary pedestrian zones.
- Cluster of houses around a common open space with appropriate landscaping. Following needs to be discouraged:
- Buildings that don't relate physically or visually to adjacent shared spaces.

Circulation

The vehicular circulation system generally includes internal circulation drives with parking areas. Important streets should be enhanced with streetscapes and sidewalks. The experience of moving on these roads can be enhanced through use of various elements such as street lighting, roadside plantation, and development of important Junctions etc. Pedestrian circulation should be promoted through provision of walkways and direct connections to adjacent streets.

- For important routes being used by Tourists, devices such as information kiosks, directional signs and maps can be used to help tourists easily locate their destinations.
- For major roads, individual road solutions shall be given to complement abutting land uses with controlled densities, roadside plantation etc.

- Neighbourhood streets should be designed to provide safe and convenient access for vehicles and pedestrians and to relate to the type of neighbourhood and uses through which the streets travel. They should provide safe and attractive designs including composition of street landscaping with sidewalks/paths. neighbourhood streets can provide a visual experience and lower the speed of local traffic by aligning with a neighbourhood focal point such as a park, a fountain or a sculpture.
- Street patterns should interconnect and encourage easy access from one neighbourhood to another & also discourage high speed travel. Individual streets should maintain adequate travel ways for emergency and service vehicle access.

Following needs to be encouraged:

- Destination assistance devices such as information kiosks, and directional signs for tourists.
- Roads relating to a neighbourhood focal point such as a street passing by a pocket park, terminating at a vista point, or interrupted by a fountain.
- Visual screening of parking areas.
- Contiguous pedestrian routes.
- Interconnected but low speed neighbourhood streets.
- Landscaping in the right of way that relates to the adjacent uses.
- Perimeter road patterns compatible with the adjacent neighbourhood street system.
- Low speed traffic techniques such as intersection at focal points.

Following needs to be discouraged:

- Parking areas located between buildings and pedestrian oriented streets.
- Pedestrian circulation patterns that discourage walking to neighbors or community destinations.
- Random curvilinear streets.

Landscaping

Landscaping should be used to soften the mass of buildings and to provide usable common space for residents. The use of elements such as evergreen groundcover and small shrubs around common spaces can add variety and delineate boundaries while allowing for surveillance. When hard surfaces are predominant feature, visual relief and interest can be provided through use of plantations such as plants with flowers and special interest plants. Common park space should be located so that it is visible to residents and accommodate a variety of activities for differing age groups.

Following needs to be encouraged:

- Trees that provide year-round visual interest such as evergreen groundcover & hardy landscaping plantings.
- Landscaping solutions such as parks/gardens in large open areas which add depth and space.
- Elements such as low walls, fences, screens, or hedges to delineate outdoor spaces.
- Adequate use of garden lighting to accentuate landscaping and pathways in the evening.
- An uninterrupted flow of landscaping between buildings and the streets by placing elements
- Abutting streets, trails or common spaces fence styles, such as low or open fences that encourage

interaction between private and public spaces.

- Paving solutions for driveways and public walkways that complement the architectural and landscape character of the area such as stone, masonry or concrete.

Following needs to be discouraged:

- High walls and solid fences adjacent to pathways or shared open space.

13.8.1.5 Water Front Development

There is scope for development of Barak waterbody using urban design tool, the existing image of these areas can be transferred into a new livable and environmental friendly image. While developing areas near water bodies the following urban design guidelines needs to be considered.

- Development around and adjacent to water bodies in Silchar should be taken up in a sensitive manner.
- Integrated development on lakefronts with the natural environment to preserve and enhance views, and protect areas of natural drainage.
- Minimise grading to maintain the natural topography, while contouring any landform alterations to blend into the natural terrain.
- Screen development adjacent to natural features as appropriate so that development does not appear visually intrusive, or interfere with the experience within the open space system. The provision of enhanced landscaping adjacent to natural features could be used to soften the appearance of or buffer development from the natural features.
- Use building and landscape materials that blend with and do not create visual or other conflicts with the natural environment.
- Design and site buildings to permit visual and physical access to the natural features from the public right-of-way.
- Encourage location of entrances and windows in development adjacent to open space to overlook the natural features.
- Protect views from public roadways and parklands to natural canyon, resource areas, and scenic vistas.
- Preserve views and view corridors along and/or into waterfront areas from the public right-ofway by decreasing the heights of buildings.
- Provide public pedestrian, bicycle, and equestrian access paths to scenic view points, parklands, and where consistent with resource protection, in natural resource open space areas.
- Provide special consideration to the sensitive environmental design of roadways that traverse natural open space systems to ensure an integrated aesthetic design that respects open space resources. This could include the use of alternative materials such as "quiet pavement" in noise sensitive locations, and bridge or roadway designs that respect the natural environment.
- Special considerations should be given to the appropriate scale, height and disposition of building blocks along the waterfront to avoid blockage of sea/land breezes and prevailing winds.

13.8.1.6 Public Spaces

Public spaces include public plazas, squares or other gathering spaces in each neighbourhood center. neighbourhood centre is a geographically localised community within a larger city, where members of a community tend to gather for group activities, social support, public information, and other purposes. They may sometimes be open for the whole community or for a specialized group within the greater community.

District centers, commercial areas, Public/ Semipublic and Recreational Areas in Master Plan demands Proper Campus Planning and care to maintain the protocol of the city.

Organised Informal Market/Food Plazas

To stop encroachment of all types of Informal markets, Master Plan have provided organized spaces for informal markets, hawkers, handicraft shops etc. these markets will be majorly located in District Centers and Core areas.

The informal and organized sector is a major source of employment in the economic fabric of the city for which the following approach is proposed:

- Earmarking of 'Hawking' and 'No Hawking' Zones at neighbourhood and cluster levels.
- The weekly markets to be identified and planned / developed.
- New areas for informal trade to be developed and integrated with housing, commercial, institutional and industrial areas.
- Provision of common basic services like toilets, water points, etc.
- Institutionalizing designs of stalls, push-carts and mobile vans.
- Design outdoor open areas as "outdoor rooms," developing a hierarchy of usable spaces that create a sense of enclosure using landscape, paving, walls, lighting, and structures.
- Design such markets/ haats to accommodate a variety of artistic, social, cultural, and recreational opportunities including civic gatherings such as festivals, markets, performances, and exhibits.
- Consider artistic, cultural, and social activities unique to the neighbourhood and designed for varying age groups that can be incorporated into the space.
- Use landscape, hardscape, and public art to improve the quality of markets/ haats.
- Encourage the active management and programming of these markets.
- Design outdoor spaces to allow for both shade and the penetration of sunlight.
- Frame parks and plazas with buildings which visually contain and provide natural surveillance into the open space.
- Involvement of NGOs envisaged.
- Address maintenance and programming.

13.8.1.7 City Gateways**Road:**

- Non-residential public buildings with pleasing appearance should be located on entry corridors.
- Attractive landscape should be developed in accordance with the highway landscape norms.
- Segregation of goods and passenger vehicles at the entry point through separate lanes to improve

the visual environment.

Rail:

- Enhancing visual experience for commuters through appropriate landscape along railway tracks. This can be done by growing colorful plantations along railway corridors, keeping wide grazing lands, mounting flags at the entry of railway stations.
- Reconstruction / redevelopment of existing stations should be undertaken through comprehensive Urban Design schemes.
- Attractive designs should be evolved for new stations.

Air:

- Designing landmarks, nodes, edges of the city in a manner that they can be recognized outstandingly in aerial views. This can be achieved by composing and contrasting scale, color, landscape of structure and boundary with surrounding area.
- Natural and built environment should be revitalized to give an impression of global city.
- The overall green cover in this zone should be enhanced and protected.

13.8.1.8 Streetscape

Hoardings & Signage:

- Hoardings, sign boards, directional boards, bill boards, neon sign bards, balloons, banners etc. have become symbols of present day urban scape and important instruments of outdoor publicity and public information. These, if located properly and aesthetically, may enhance the visual quality of the city. Otherwise, these may cause hazards, obstruction and visual pollution etc.
- Design signage to effectively utilize sign area and complement the character of the structure and setting
- Architecturally integrate signage into design.
- Include pedestrian-oriented signs to acquaint users to various aspects of a development.
- Place signs to direct vehicular and pedestrian circulation.
- Post signs to provide directions and rules of conduct where appropriate behavior control is necessary.
- Design signs to minimize negative visual impacts.
- Address community-specific signage issues in community plans, where needed.
- A major cause for present day chaos on the roads is that the road infrastructure, signage and road markings are not in accordance to the standards laid down by the Motor Vehicle Rules and Highway Code.
- Safety of road users shall be one of the prime consideration while planning / designing of road network and infrastructure.
- Appropriate road signage and markings are excellent means of educating road users about road safety rules and road discipline and add to the road beautification. These prevent the deviant behaviour of motorists and at the same time provide useful route related information.
- Concerned road owning agencies shall be responsible for installing the appropriate road signage and markings on regular basis.

Street Furniture:

- Public art is an important part of the urban spatial experience, which can be incorporated in the form of functional objects such as street furniture and paving designs.
- Street furniture should be designed sensitively considering the land use, intensity of activity and other identified design districts. Their design must also reflect respect to pedestrians and physically challenged people.
- Access provisions for the physically challenged should be made from the street to overcome curb heights, rain water gratings etc.
- Locate street trees in a manner that does not obstruct ground illumination from streetlights.
- Shade paved areas, especially parking lots.
- Parking spaces close to the entrance should be reserved for physically challenged.
- Exclusive parking bays are proposed near major intersections as part of road R/W with adequate landscaping to provide for parking of mobile repair vans, PCR vans, ambulances, cranes, fire tenders and other public utility vehicles.

Street Frontage:

- Create street frontages with architectural and landscape interest to provide visual appeal to the streetscape and enhance the pedestrian experience.
- Locate buildings on the site so that they reinforce street frontages.
- Relate buildings to existing and planned adjacent uses.
- Ensure that building entries are prominent, visible, and well-located.
- Maintain existing setback patterns, except where community plans call for a change to the existing pattern.
- Establish or maintain tree-lined residential and commercial streets. Neighbourhoods and commercial corridors in the town that contain tree-lined streets present a streetscape that creates a distinctive character.
- Minimize the visual impact of garages, parking and parking portals to the pedestrian and street façades.

Pedestrian Friendly City:

- Major work centres, where large number of pedestrian networks emerge and culminate, should have enhanced facilities for the pedestrians.
- This will lead to more sensitive and intricate design of street furniture, making major image able components part of daily urban experience.
- Design landscape bordering the pedestrian network with new elements, such as a new plant form or material, at a scale and intervals appropriate to the site. This is not intended to discourage a uniform street tree or landscape theme, but to add interest to the streetscape and enhance the pedestrian experience.
- Use effective lighting for vehicular traffic while not overwhelming the quality of pedestrian lighting.
- Pedestrian networks affect spaces in a very distinctive way.
- Establishment of pedestrian networks in any area reveals its vitality.

- They provide richness in terms of spatial experience and community interaction etc.

Transit Integration:

- Provide attractively designed transit stops and stations that are adjacent to active uses, recognizable by the public, and reflect desired neighbourhood character
- Design safe, attractive, accessible, lighted, and convenient pedestrian connections from transit stops and stations to building entrances and street network
- Provide generous rights-of-way for transit, transit stops or stations.
- Locate buildings along transit corridors to allow convenient and direct access to transit stops/stations.

Parking:

- Reduce the amount and visual impact of surface parking lots
- Encourage placement of parking along the rear and sides of street-oriented buildings.
- Avoid blank walls facing onto parking lots by promoting treatments that use colors, materials, landscape, selective openings or other means of creating interest.
- Design clear and attractive pedestrian portico/pathways and signs that link parking and destinations.
- Locate pedestrian pathways in areas where vehicular access is limited.
- Avoid large areas of uninterrupted parking especially adjacent to community public view sheds.
- Build multiple small parking lots in lieu of one large lot.
- Retrofit existing expansive parking lots with street trees, landscape, pedestrian paths, and new building placement.
- Promote the use of pervious surface materials to reduce runoff and infiltrate storm water.
- Use trees and other landscape to provide shade, screening, and filtering of storm water runoff in parking lots.

Utilities:

- Minimize the visual and functional impact of utility systems and equipment on streets, sidewalks, and the public realm.
- Convert overhead utility wires and poles, and overhead structures such as those associated with supplying electric, communication, community antenna television, or similar service to underground.
- Design and locate public and private utility infrastructure, such as phone, cable and communications boxes, transformers, meters, fuel ports, back-flow preventors, ventilation grilles, grease interceptors, irrigation valves, and any similar elements, to be integrated into adjacent development and as inconspicuous as possible.
- To minimize obstructions, elements in the sidewalk and public right of way should be located in below grade vaults or building recesses that do not encroach on the right of way (to the maximum extent permitted by codes).
- If located in a landscaped setback, they should be as far from the sidewalk as possible, clustered and integrated into the landscape design, and screened from public view with plant and/or fence-like elements.
- Traffic operational features such as streetlights, traffic signals, control boxes, street signs and similar

facilities should be located and consolidated on poles, to minimize clutter, improve safety, and maximize public pedestrian access, especially at intersections and sidewalk ramps. Other street utilities such as storm drains and vaults should be carefully located to afford proper placement of the vertical elements.

13.8.1.9 District Centres

A District Centre has been envisaged as a multiple service providing campus, catering to surrounding urban area. The core commercial area such as Wholesale markets, shopping complexes, office buildings, etc. shall be reviewed as a District Centre. The similar definition does not imply to the informal markets but if the informal markets are part of any above category that shall be reviewed and organized in District centre. There are few common components that should dealt through Urban Design perspective to maintain and enhance the ultimate urban character and image.

1. Landscape
2. Parking
3. Pedestrian Movement
4. Public Spaces
5. Unique Building Character

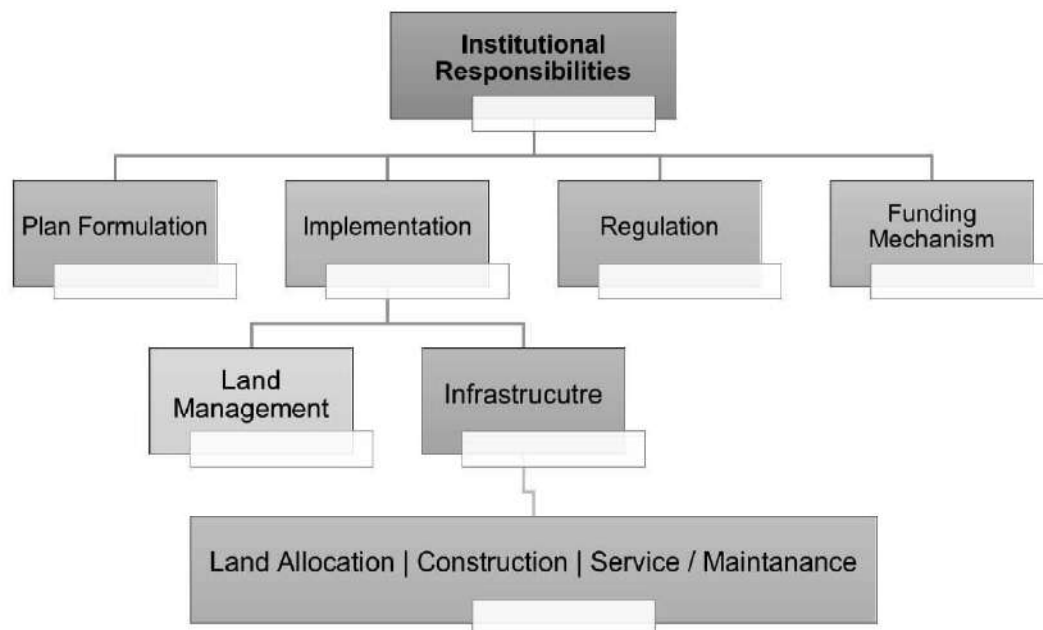
General Guidelines:

- The area provided for landscape as part of the district centre should weave through the entire district centre to create a pleasant environment.
- Detailed Urban Design and Landscape Schemes should be prepared to integrate Public Transport Terminals, safe pedestrian walkways, parking areas, recreational and cultural areas, etc.
- The envelope, FAR, architectural features of the District Center buildings should be merged with surrounding area.
- A certain percentage of open area should be made mandatory in district center design so that it can be used as recreational area, exhibition purpose or any local festivals.
- Continuity of the sidewalks should be maintained in terms of the width, surface treatment, curb cuts, tree and street furniture locations, for the pedestrians and disabled.
- A district centre should be accessible from the surrounding residential areas through the pedestrian approach or by subways etc. The intermediate public transport should be introduced to increase the mobility within the City Centre.
- An adequate parking should be provided in District Center.
- Provision of common basic services like Public toilets, water points, etc.
- Signage and lighting: for visual accessibility, district center should be provided with proper lighting system and signages. As Silchar is tourist destination, signages in English as well as Hindi should be promoted.
- Use of alternative renewable sources of energy should be encouraged for new buildings (especially those of commercial or institutional nature), traffic signals and public signage, etc
- Planned district centres in city (forming a multi nodal city structure) can be best utilized for creating public spaces and through these, District Centers City will be livelier, inviting and livable.
- As per the proposal of Govt. of India, few free wi-fi zones should be provided in order to encourage the Digital India.

14 INSTITUTIONAL FRAMEWORKS

14.1 PROPOSED INSTITUTIONAL FRAMEWORK

Institutional Responsibilities contain Master Plan formulation, effective implementation, strict monitoring of following General Development Regulations and funding mechanism. For effective implementation, available land resource is to be managed very judiciously and infrastructure is to be provided along with proper maintenance from time to time. As mentioned in Chapter 12.6, it is proposed to have Silchar Municipal Board (SMB) with same jurisdiction of Conurbation Area for



obtaining substantial funds from State Government as well as Central Government, which will lead to effective implementation of the Master Plan. For better implementation of Master Plan, responsibilities are to be allocated very judiciously.

The various projects identified for Silchar Development Authority (SDA) and the concerned Government Departments in line with the Vision statement – 2045 for Silchar Planning Area are detailed in Table below.

Table 226 Institutional Framework for Project Implementation

Sl. No.	Location	Project Name	Concerned Department
Urban Development			
1	Core area of Silchar Town	Urban Renewal of Core Old Areas of Silchar Town	DoHUA (T&CP, SDA)
2	Core area of Silchar Town	Development of Heritage Buildings of Silchar Town	DoHUA (T&CP, SDA)
3	Distributed in Town	Rehabilitation of Slums dwellers along Barak river and on Water Bodies located in Planning Area	SMB, Housing Board
4	Silchar Planning Area	Green area around Industrial area and Wetlands	PWRD, DoHUA (T&CP, SDA)
5	Tarapur Pt. VI	Neighbourhood Centre at Tarapur Pt. VI	Revenue Dept., DoHUA (T&CP, SDA)
6	Dudhpatil Pt. V	Neighbourhood centre at Dudhpatil Pt. V	Revenue Dept., DoHUA (T&CP, SDA)

7	Rangpur Pt. III	Neighbourhood Centre at Rangpur Pt. III	Revenue Dept., DoHUA (T&CP, SDA)
8	Tarapur Pt. V	Neighbourhood centre at Tarapur Pt. V	Revenue Dept., DoHUA (T&CP, SDA)
9	Ambikapur Pt. I	Neighbourhood Centre at Ambikapur Pt. I	Revenue Dept., DoHUA (T&CP, SDA)
10	Ambikapur Pt. I	Neighbourhood Centre at Ambikapur Pt. I	Revenue Dept., DoHUA (T&CP, SDA)
11	Ambikapur Pt. VIII	Neighbourhood centre at Ambikapur Pt. VIII	Revenue Dept., DoHUA (T&CP, SDA)
12	Ambikapur Pt. II	Neighbourhood Centre at Ambikapur Pt. II	Revenue Dept., DoHUA (T&CP, SDA)
13	Ambikapur Pt. X	Neighbourhood centre at Ambikapur Pt. X	Revenue Dept., DoHUA (T&CP, SDA)
14	Ambikapur Pt. VI	Neighbourhood centre at Ambikapur Pt. VI	Revenue Dept., DoHUA (T&CP, SDA)
15	Uttar Krishnapur Pt. I	Neighbourhood centre at Uttar Krishnapur Pt. I	Revenue Dept., DoHUA (T&CP, SDA)
16	Sabajpur	Neighbourhood centre at Sabajpur	Revenue Dept., DoHUA (T&CP, SDA)
17	Uttar Krishnapur Pt. III	Neighbourhood centre at Uttar Krishnapur Pt. III	Revenue Dept., DoHUA (T&CP, SDA)
18	Bagalaghat Grant Pt. I	Neighbourhood centre at Bagalaghat Grant Pt. I	Revenue Dept., DoHUA (T&CP, SDA)
18	Ambikapur Pt. V	Neighbourhood centre at Ambikapur Pt. V	Revenue Dept., DoHUA (T&CP, SDA)
19	Saidpur Pt. I	Neighbourhood centre at Saidpur Pt. I	Revenue Dept., DoHUA (T&CP, SDA)
20	Tarapur Pt. VI	Affordable Housing (1 ha)	Revenue Dept., DoHUA (T&CP, SDA)
21	Dudhpatil Pt. V	Affordable Housing (2 Ha)	Revenue Dept., DoHUA (T&CP, SDA)
22	Dudhpatil Pt. V	Affordable Housing (1.5 Ha)	Revenue Dept., DoHUA (T&CP, SDA)
23	Rangpur Pt. III	Affordable Housing (8 Ha)	Revenue Dept., DoHUA (T&CP, SDA)
24	Tarapur Pt. V	Affordable Housing (6 Ha)	Revenue Dept., DoHUA (T&CP, SDA)
25	Ambikapur Pt. I	Affordable Housing (5 Ha)	Revenue Dept., DoHUA (T&CP, SDA)
26	Ambikapur Pt. VIII	Affordable Housing (6 Ha)	Revenue Dept., DoHUA (T&CP, SDA)
27	Ambikapur Pt. VII	Affordable Housing (6 Ha)	Revenue Dept., DoHUA (T&CP, SDA)
28	Bagalaghat Grant Pt. I	Affordable Housing (7 Ha)	Revenue Dept., DoHUA (T&CP, SDA)
29	Ambikapur Pt. VI	Affordable Housing (4 Ha)	Revenue Dept., DoHUA (T&CP, SDA)
30	Uttar Krishnapur Pt. II	Affordable Housing (4 Ha)	Revenue Dept., DoHUA (T&CP, SDA)
31	Uttar Krishnapur Pt. IV	Affordable Housing (4 Ha)	Revenue Dept., DoHUA (T&CP, SDA)
32	Saidpur Pt. I	Affordable Housing (8 Ha)	Revenue Dept., DoHUA (T&CP, SDA)
Public-Semi Public Places			
33	Dudhpatil Pt. V	Administrative Block (30 ha)	DoHUA, PWD(Building)
34	Dudhpatil Pt. V	International Convention Centre (ICC) (5 ha)	DoHUA (T&CP)
35	Ambikapur Pt. VI	Knowledge District (35)	DoHUA (SDA), Education Dept.
Water Supply System			
36	Silchar Planning Area (SMPA)	Preparation of DPR for Water Supply System for Silchar Planning Area	PHE Dept., DoHUA
37	Existing Silchar Town	Water Supply System sanctioned under AMRUT	PHE Dept., SMB
38	Existing Silchar Development Authority Area	Improvement of Water Supply System of Silchar	PHE Dept., DoHUA (SDA), SMB
39	Silchar Planning Area	Hand Pump water Distribution System	PHE Dept., DoHUA (SDA)
Power			
40	Existing Silchar Municipal Area	Renovation and modernization of 33/11 KV and 11 KV / 440 V sub- stations	State Electricity Board, DoHUA
41	Existing Silchar Development Authority Area	Installation of new transformers and capacity augmentation of existing transformers	State Electricity Board, DoHUA
42	Existing Silchar Development Authority Area	Metering of All connections	State Electricity Board

43	Existing Silchar Development Authority Area	Installation of a HVDS (High Voltage Distribution System)	State Electricity Board, DoHUA
44	Silchar Planning Area 2045	Preparation of DPR for Power Supply System for Silchar Planning Area 2045	State Electricity Board, DoHUA
Sewerage System			
45	Silchar Planning Area 2045	Preparation of DPR for Sewerage System for Silchar Planning Area	PHE, DoHUA
46	Silchar Planning Area 2045	Laying of Sewer Network for Planning Area	PHE, DoHUA
47	Bagala Ghat Grant Pt. 1	Construction of STP (30 MLD) on 10 Hectare of Land	PHE, DoHUA
48	Berenga Pt. IV	Construction of STP (50 MLD) on 15 Hectare of Land	PHE, DoHUA
49	Dhamalia	Construction of STP (35 MLD) on 8 Hectare of Land	PHE, DoHUA
Solid Waste Management			
50	Silchar Planning Area	Improvement and Modernization of Solid Waste Collection, Transportation and Disposal System of Silchar	SMB, DoHUA
51	Silchar Planning Area	Development of Solid Waste Treatment Plant of 200 TPD Capacity	DoHUA
Drainage System			
52	Silchar Planning Area 2045	Preparation of DPR for Drainage System for Silchar Planning Area	DoHUA, Water Resource, Revenue Dept.
53	Silchar Town	Cleaning and maintenance of existing main drains	DoHUA, Water Resource, Revenue Dept.
54	Silchar Planning Area 2045	Laying of Roadside drains in new proposed areas within Silchar Planning Area	PWRD, Water Resource, Revenue Dept.
55	Silchar Town	Construction and Improvement of Storm Water Drainage System	PHE Dept., SMB, SDA, Revenue Dept.
56	Silchar Planning Area 2045	Slope protection, Improvement, Construction, Repair & Restoration	PHE Dept., SMB, SDA, Revenue Dept.
Water Bodies			
57	Silchar Planning Area 2045	Repair and Renovation of Water Bodies in Planning Area	Revenue, Water Resource, Fisheries, DoHUA
58	Silchar Planning Area 2045	Development of Green Cover around all water bodies	Revenue, Soil Conservation, DoHUA
59	Silchar Planning Area 2045	Development of Silchar River Front on Barak River	Revenue, Water Resource Dept.
60	Silchar Planning Area	Development of Barak river with joggers track as recreational zone	Revenue, Water Resource Dept., DoHUA
61	Ramnagar	Development of Anuabill as recreational area	Revenue, Water Resource Dept., Fisheries, DoHUA
Traffic and Transportation			
62	Silchar Town	Repair and Renovation of Existing Road Network of Silchar Town	SMB, NHAI, NHIDCL, PWRD
63	Rangpur Pt. II	Development of Moinarband Railway Station	Railway Dept.
64	Tarapur Pt. IV	Augmentation of ISBT	DoHUA (T&CP, SDA)
65	Dudhpatil Pt. IV	Development of Intermediate Freight Complex (60 Ha)	Revenue, DoHUA (T&CP, SDA)
66	Rangpur Pt. II	Development of Bus Terminal (8 Ha)	Revenue, DoHUA (T&CP, SDA)
67	Dudhpatil Pt. IV	Development of Bus Terminal (4 Ha)	Revenue, DoHUA (T&CP, SDA)
68	Ambikapur Pt. II	Development of Bus Terminal (5 Ha)	Revenue, DoHUA (T&CP, SDA)
69	Dudhpatil Pt. IV	Development of Truck Terminal (5 Ha)	Revenue, DoHUA (T&CP, SDA)
70	Silchar Planning Area 2045	Preparation of DPR on City Mobility Plan	SDA

71	Silchar Planning Area 2045	Construction of City Ring Road	PWRD
72	Silchar Planning Area	Improvement of Traffic Signal facility in Silchar Planning Area	SMB, DoHUA (T&CP, SDA)
73	Silchar Planning Area	Augmentation of City Bus Fleet	SMB, DoHUA (T&CP, SDA)
74	Silchar Planning Area	Construction of Non-motorised Transport facilities (Footpaths & Cycle Tracks & Cycle Parking)	SMB, PWRD, DoHUA (T&CP, SDA)
75	Rajpath Road, Sadarghat	Construction of Multi level cum Daily Market	Revenue, SMB, DoHUA (T&CP, SDA)
76	Janigunj Road, Near Court	Construction of Multi level cum Daily Market	Revenue, SMB, DoHUA (T&CP, SDA)
77	Sadarghar Junction, Near Divisional Forest Office	Construction of Multi level cum Daily Market	Revenue, SMB, DoHUA (T&CP, SDA)
78	Itkhola Road	Construction of Multi level cum Daily Market	Revenue, SMB, DoHUA (T&CP, SDA)
79	Kalain Road- NH 37 Junction	Construction of Multi level cum Daily Market	Revenue, DoHUA (T&CP, SDA)
80	Ward 26	Construction of Multi level cum Daily Market	Revenue, SMB, DoHUA (T&CP, SDA)
81	Ward 17	Construction of Multi level cum Daily Market	Revenue, SMB, DoHUA (T&CP, SDA)
82	Ward 23	Construction of Multi level cum Daily Market	Revenue, SMB, DoHUA (T&CP, SDA)
83	Ward 19	Construction of Multi level cum Daily Market	Revenue, SMB, DoHUA (T&CP, SDA)
84	Ambikapur Pt. 3, Chengkuri Road	Construction of Multi level cum Daily Market	Revenue, DoHUA (T&CP, SDA)
85	Ambikapur Pt. X, Hailakandi Road	Construction of Multi level cum Daily Market	Revenue, DoHUA (T&CP, SDA)
86	Bhorakhal Grant Pt.2	Construction of Multi level cum Daily Market	Revenue, DoHUA (T&CP, SDA)
87	Srikona	Construction of Multi level cum Daily Market	Revenue, DoHUA (T&CP, SDA)
88	Kalain Road Railway line	Construction of ROB on Sadar Railway Station line for Ring Road	PWD, Railway
89	Maghughat	Construction of ROB on railway line near Mazumdar Bridge	PWD, Railway
90	Tarapur VII, Ramnagar Road	Construction of ROB on NH 37 on Railway line near Ramnagar	PWD, Railway
91	Ukil Bazar Pt. 1	Construction of Parallel ROB on Sadar Railway Track	PWD, Railway
92	NH-37, Silchar Bypass Road	Development of ISBT Fly over on Karimganj-Silchar Road	PWRD, NH, NHIDCL
93	Silchar Bypass- Chengkuri Road	Development of Fly over on Silchar Bypass Road	PWRD, NH, NHIDCL
94	Silchar Bypass- Khatal Road	Development of Fly over on Silchar Bypass Road	PWRD, NH, NHIDCL
95	Silchar Bypass- Hailakandi Road (SH 39)	Development of Fly over on Silchar Bypass Road	PWRD, NH, NHIDCL
96	Silchar Bypass- Atal Basti Road	Development of Fly over on Silchar Bypass Road	PWRD, NH, NHIDCL
97	Silchar Bypass- NH 306	Development of Fly over on Silchar Bypass Road	PWRD, NH, NHIDCL
98	Sonabari Ghat	Development of River Bridge on Barak River	PWRD, NH, NHIDCL
99	Uttar Krishnapur Pt. I	Development of River Bridge on Barak River	PWRD
100	Tupkhana Pt. I	Development of River Bridge on Barak River	PWRD, NH, NHIDCL
Commercial			
101	Tarapur Pt. V	Development of Commercial/ District Centre	DoHUA
102	Ambikapur Pt. II	Development of Commercial/ District Centre	DoHUA
103	Dudhpatil Pt. IV	Development of Commercial/ District Centre	DoHUA
104	Rangpur Pt. III	Development of Commercial/ District Centre	DoHUA

105	Ambikapur Pt. VI	Development of Commercial/ District Centre	DoHUA
106	Uttar Krishnapur Pt. IV	Development of Commercial/ District Centre	DoHUA
107	Bhajantipur Pt. I	Development of Integrated Commercial Centre	DoHUA
108	No. 2 Bhurbhuri Gaon	Development of Integrated Commercial Centre	DoHUA
109	Dudhpatil Pt. IV	Development of Wholesale and Trade Centre (10 Ha)	DoHUA (T&CP, SDA)
110	Ambikapur Pt. II	Development of Wholesale and Trade Centre (10 Ha)	DoHUA (T&CP, SDA)
111	Ambikapur Pt. VI	Development of Handicraft Trade Centre (8 Ha)	DoHUA (T&CP, SDA)
Social Infrastructure			
112	Dudhpatil Pt. V	Development of Multi-Specialist Intermediate District Hospital	Health, PWDB
113	Ambikapur Pt. VII	Development of Multi-Specialist Intermediate District Hospital	Health, PWDB
114	Ward 11	Development of Subash Nagar Graveyard	Health, PWDB
115	Malugram	Development of Santiban Graveyard	Health, PWDB
116	Ward 11	Improvement of Civil Hospital	Health, PWDB
117	Bhajantipur Pt. I	Development of Knowledge District	Education, DoHUA
118	Dudhpatil Pt. V	Development of Knowledge District	Education, DoHUA
Recreational			
119	Dudhpatil Pt. IV	Development of Botanical Garden	Tourism, DoHUA, PWD
120	Gangapur	Development of District Sport Centre cum Complex	District Sport Office, DoHUA
121	Ward 24	Augmentation and Beautification of Gandhi Baug	DoHUA
122	Ambikapur Pt. II	Development of Indoor Stadium and Sport Centre	District Sport Office, DoHUA
123	Bhajantipur Pt. II	Development of District Level Park	DoHUA
124	Uttar Krishnapur Pt. I	Development of District Level Park	DoHUA
125	Gangapur	Development of Cultural Complex	DoHUA
126	Gangapur	Development of Theme/Amusement Park	DoHUA, Tourism
127	Ambikapur Pt. V	Development of Lake Front cum Amusement Park (Gorakuri Bill)	DoHUA, Tourism
128	Bhajantipur Pt. I	Development of Lake Front (Changkuri Bill)	DoHUA, Tourism
129	Dhamalia	Development of Open Organized Spaces	DoHUA
130	Ambikapur Pt. VI	Development of Open Organized Spaces	DoHUA
131	Silchar Planning Area and Surrounding Region	Development of Heritage Circuit (Development of Infrastructure at Kachari Fort, Circuit House, District Session Judge Court Building, Normal School, Chief Judicial Magistrate Building, Judge Bungalow, Civil Surgeon Bungalow, in Silchar Planning Area)	DoHUA, Tourism
Industrial Area			
132	Dudhpatil Pt. VI-VII	Development of Industrial Estate – I	Revenue, SDA, AIDCL
133	Dudhpatil Pt. IV	Development of Industrial Estate – II	Revenue, SDA, AIDCL
134	Tarapur Pt. III-IV	Development of Industrial Estate – III	Revenue, SDA, AIDCL
135	Ambikapur Pt. – II	Development of Industrial Estate – IV	Revenue, SDA, AIDCL

14.2 ROLE OF MUNICIPAL CORPORATION IN SMP

Municipal Board will be responsible for operation and maintenance works in water supply, sewerage, storm water drainage, Solid Waste Management, DP & TP roads and street lighting. The other responsibilities are described below:

- The construction, diversion, maintenance and improvement of streets, bridges, squares, gardens, tanks, ghats, wells, channels, drains, latrines and urinals;
- The watering and cleaning of streets;
- Lighting;
- Water-supply;
- Conservancy including sewage disposal;
- Acquiring, keeping and equipping of open spaces for public purposes;
- Planting and preservation of trees;
- Construction of dwelling houses;
- Maintenance and improvement of education;
- Construction and maintenance of hospitals, dispensaries, orphanages, maternity houses, dharmasalas, guest houses etc.;
- Promotion of vaccination;
- Prevention of the spread of dangerous diseases;
- Construction and maintenance of municipal markets and slaughter houses;
- Assistance to public libraries;
- Giving of relief in time of famine, scarcity or any other natural calamity;
- Urban Planning including town planning;
- Disposal of the dead animals or bodies;
- Establishment and maintenance of burial grounds;
- Implementation of the planning in the municipal area as a part of the Development Plan;
- Regulation of slaughter houses and tanneries;
- Fire Services;
- Urban forestry and protection of the environment;
- Safeguarding the interest of the weaker section;
- Slum improvement and up-gradation;
- Promotion of urban amenities; Registration of births and deaths;
- Regulation of slaughter houses and tanneries;
- Adult education and non-formal education;
- Health and family planning;
- Welfare of SC and ST;
- Maintenance of municipal markets;
- Maintenance of monuments and historical places;
- Clearing Public Street and places; etc

Acronyms

AADT	Average Annual Daily Traffic
ABD	Area Based Development
ADT	Average Daily Traffic
AHP	Affordable Housing Project
AIDCL	Assam Industrial Development Corporation Ltd.
AIR	All India Radio
AMRUT	Atal Mission for Rejuvenation and Urban Transformation
APDCL	Assam Power Distribution Company Limited
ASDMA	Assam State Disaster Management Authority
ASI	Archaeological Survey of India
ASTC	Assam State Transport Corporation
AUDA	Ahmedabad Urban Development Authority
BIS	Bureau of Indian Standards
BLC	Beneficiary Led Construction
BMW	Bio Medical Wastes
BOD	Biological Oxygen Demand
BOT	Built Operate and Transfer
BPL	Below Poverty Line
BRTS	Bus Rapid Transit System
BSF	Border Security Force
BSNL	Bharat Sanchar Nigam Limited
CBD	Central Business District
CDMP	City Disaster Mitigation Plan
CDP	City Development Plan
CEO	Chief Executive Officer
CHPEEO	Central Public Health and Environmental Engineering Organisation
CIDCO	City and Industrial Development Corporation
CIDF	City Infrastructure Development Fund
CLSS	Credit Linked Subsidy Scheme
CNA	Central Nodal Agencies
CO	Circle Officer
COPD	Chronic Obstructive Pulmonary Disease
CPCB	Central Pollution Control Board
CPHEEO	Central Public Health and Environmental Engineering Organisation
CPM	Cachar Paper Mill
CPT	Central Place Theory
CPWD	Central Public Work Department
CRC	Central Relief Commissioner
CSMC	Central Sanctioning and Monitoring Committee
CSS	Centrally Sponsored Scheme
CT	Census Town
CVC	Classified Volume Counts
DC	Deputy Commissioner

DCR	Development Control Regulation
DDIPR	District Directorate of Information and Public Relations
DDMA	District Disaster Management Authority
DEOC	District Emergency Operational Centre
DIO	Defence Intelligence Organisation
DM	Disaster Management
DP	Development Plan
DPR	Detail Project Report
DRDA	District Rural Development Agency
DSA	District Sport Association
DTO	District Transport Office
ECS	Equivalent Car Space
EDC	External Development Charges
ESR	Elevated Service Reservoir
ETP	Effluent Treatment Plant
EWS	Economical Weaker Section
FAR	Floor Area Ratio
FDI	Foreign Direct Investment
FICCI	Federation of Indian Chambers of Commerce & Industry
FMB	Field Measurement Book
FSI	Floor Space Index
GDCR	General Development Control Regulation
GDP	Gross Domestic Product
GHMC	Greater Hyderabad Municipal Corporation
GIS	Geographic Information System
GLSR	Ground Level Storage Reservoir
GOI	Government of India
GOSS	Ground Operational Support System
GTPUDA	Gujarat Town Planning and Urban Development Act
HCF	Heavy Chemical Factory
HCM	Heavy Construction Machinery
HCV	Heavy Commercial Vehicle
HDB	Housing and Development Board
HFAP	Housing for All Plan
HH	House Hold
HIG	Higher Income Group
HIV	Human Immunodeficiency Virus
HMV	Heavy Motor Vehicle
HQ	Head Quarter
HUDCO	High Voltage Distribution System
HVDS	Internal Development Charges
IAS	Indian Administrative Service
ICC	International Convention Centre
IDC	Internal Development Charges

IEC	Information, Education and Communication
IHHL	Individual Household Latrine
IMD	India Meteorological Department
INR	Indian Rupees
IOCL	Indian Oil Corporation Limited
IPT	Intermediate Public Transfer
IRC	Indian Road Congress
ISBT	Inter-State Bus Terminus
ISSR	In-situ Slum Rehabilitation
ISTT	Inter-State Truck Terminal
IT	Information Technology
ITI	Industrial Training Institute
KLD	Kilo Litre per Day
KV	Kilo Volt
LARR	Land Acquisition, Rehabilitation and Resettlement
LAX	Los Angeles International Airport
LCV	Light Commercial Vehicle
LIC	Life Insurance Corporation
LIG	Low Income Group
LMV	Light Motor Vehicle
LPG	Liquefied Petroleum Gas
LPS	Land Pooling System
MAV	Multi Axle Vehicle
MB	Municipal Board
MCV	Medium Commercial Vehicle
MFF	Multitranchise Financing Facility
MFZ	Multi Functional Zones
MIG	Medium Income Group
MLD	Million Liter per Day
MMRDA	Mumbai Metropolitan Region Development Authority
MNES	Ministry of Non-Conventional Energy Sources
MP	Member of Parliament
MPA	Master Plan Area
MSL	Mean Sea Level
MSW	Municipal Solid Waste
MT	Metric Tonnes
MW	Mega Watt
NBC	National Building Code
NCC	National Cadet Corps
SDMA	Silchar Disaster Management Authority
NE	North-East
NGO	Non Governmental Organization
NH	National Highway
NHAI,	National Highways Authority of India
NHB	National Housing Bank

NHIDCL	National Highways and Infrastructure Development Corporation
NIT	National Institute of Technology
NMT	Non Motorised Transport
NPV	Net Present Value
NRDF	National Research and Development Foundation
NRSC	National Remote Sensing Centre
NSS	National Service Scheme
NUHHP	National Urban Housing and Habitat Policy
OBC	Ordinari Backward Class
OD	Origin- Destination
OG	Out Growth
OHR	Over Head Reservoir
OHT	Over Head Tank
ONGC	Oil and Natural Gas Corporation
PCB	Pollution Control Board
PCBA	Pollution Control Board Assam
PCR	Police Control Room
PCU	Passanger Car Unit
PET	Polyethylene Terephthalate
PHC	Public Health Centre
PHE	Public Health Engineering
PHED	Public Health Engineering Department
PIA	Public Interest Area
PLU	Proposed Land Use
PMAY	Pradhan Mantri Awas Yojana
PPH	Person Per Hector
PPP	Public Private Partnership
PSP	Public & Semi-Public
PUC	Pollution Under Control
PWD	Public Work Department
PWDB	Public Work Department Building
PWRD	Public Work Road Department
RAF	Royal Air Force
RAH	Residential Affordable Housing
RAY	Rajivgandhi Awas Yojana
RBI	Reserve Bank of India
RCC	Reinforced Cement Concrete
RERA	Real Estate Regulatory Authority
RF	Reserved Forest
RIAF	Royal Indian Air Force
ROB	Road Over Bridge
ROW	Right of Way
RRB	Regional Rural Bank
RRT	Rapid Response Team
SC	Scheduled Caste

SDA	Silchar Development Authority
SDO	Sub Divisional Officer
SDRF	State Disaster Response Force
SHG	Self Help Group
SLSMC	State Level Sanctioning and Monitoring Committee
SMB	Silchar Municipal Board
SMP	Silchar Master Plan
SMPA	Silchar Master Plan Area
SOP	Standard Operating Procedure
ST	Scheduled Tribe
STP	Sewerage Treatment Plant
SW	Solid Waste
SWM	Solid Waste Management
SWTP	Solid Waste Treatment Plant
TDR	Transferable Development Right
TIF	Tax Increment Financing
TOD	Transit Oriented Development
TP	Town Planning
TPD	Tonnes Per Day
TPS	Town Planning Scheme
TSC	Total Sanitation Campaign
TSDF	Treatment Storage and Disposal Facility
TVC	Traffic Volume Count
ULB	Urban Local Body
UNCHS	United Nations Centre for Human Settlements
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
URDPFI	Urban and Regional Development Plans Formulation and Implementation
USA	United States of America
UT	Union Territory
VAMBAY	Valmiki Ambedkar Awas Yojana
VCF	Value Capture Finance
VDP	Village Defence Party
VLT	Vacant Land Tax
WBM	Water-Bound Macadam
WFPR	Work Force Participation Rate
WLS	Wildlife Sanctuary
WPR	Workforce Participation Rate
WTE	Waste-to-Energy
WTP	Water Treatment Plant

